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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/554,081

10/21/2005

Wenhao Wang

KINW-01

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EXAMINER

PO, MING CHEUNG

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

08/03/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/554,081	Applicant(s) WANG, WENHAO	
	Examiner MING CHEUNG PO	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 13 and 14 is/are rejected.
- 7) ☐ Claim(s) 9, 10, 12 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This is the response to amendment filed on 05/07/2010 for application 10/554081.
2. Claims 1-10 and 12-15 are pending and have been fully considered.
3. The 35 U.S.C. 101 rejection of claims 9-10, 12, and 15 has been withdrawn.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. The term "conventional" in claim 9 is a relative terms which render the claim indefinite. The term "conventional" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
7. Claim 1-8 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petroleum Products Handbook.

Gasoline is taught in pp 4-8 of the petroleum products handbook to be a mixture almost exclusively of hydrocarbons such as C₅ to C₁₂ hydrocarbons. Since the length of

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one carbon atoms is of the order of the angstroms. It would be obvious to one of ordinary skill that even 12 carbon atoms would be smaller than 3.0 nm.

Regarding claim 5, diesel oil is well known to be in the range of 8-24 carbons per molecule.

Regarding claim 6, kerosene is well known to be comprised of molecules with 6 to 16 carbon atoms per molecule.

Fuel oils such as gasoline, diesel oil, kerosene, heavy oil or bio-diesel contain molecules that are less than 10 nm. For gasoline, diesel oil, kerosene and heavy oil, the hydrocarbons that make up these fuel oils are hydrocarbons ranging from 5 carbon atoms for gasoline to 60+ carbon atoms for heavy oil. The atomic radius of carbon is 70 pm. A straight chain carbon hydrocarbon would therefore have a radius of about 350 pm.

Regarding claims 13 and 14, fuel oils such as gasoline that pass through a magnetic field would exit with the same properties since hydrocarbon fuels such as gasoline is nonpolar and there is no reason to believe that they would be affected by a magnetic field. Therefore, fuel oil that is prepared by the present method 9 is the same fuel oil that was fed into the magnetic field. Applicant is reminded that claims 13 and 14 are product by process claims and even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production.

Allowable Subject Matter

8. Claim 9 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

9. Claims 10, 12 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: WENHAO (ZL94113646.9) and DOLAN (U.S.5,985,153) fails to teach all the conditions of the magnetic field that the fuel oil is passed through, specifically the magnetic field intensity of 8,000 Gauss.

Response to Arguments

11. Applicant's arguments, see pages 12-14, filed 05/07/2010, with respect to claims 9-10, 12, and 15 have been fully considered and are persuasive. The 35 USC 112 rejection and 35 USC 103(a) rejection of claims 9-10, 12 and 15 has been withdrawn.

12. Applicant's arguments filed 05/07/2010 have been fully considered but they are not persuasive.

Applicant argues that Petroleum Products Handbook and conventional knowledge does not teach granules less than 3nm. Applicant references the SANS measurement to state that there is a fuel oil that has granule sizes larger than 3nm. This is unpersuasive. Applicant has shown that two conventional fuel oils may have granules large than 3 nm. This does not prove that gasoline, diesel oil, kerosene, heavy oil, bio-diesel would have granules larger than 3 nm. Fuel oils such as gasoline, diesel

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oil, kerosene, heavy oil or bio-diesel contain molecules that are less than 10 nm. For gasoline, diesel oil, kerosene and heavy oil, the hydrocarbons that make up these fuel oils are hydrocarbons ranging from 5 carbon atoms for gasoline to 60+ carbon atoms for heavy oil. The atomic radius of carbon is 70 pm. A straight chain carbon hydrocarbon would therefore have a radius of about 350 pm. Applicant has not shown that all fuel oils form granules greater than 3 nm.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MING CHEUNG PO whose telephone number is (571)270-5552. The examiner can normally be reached on 9:00 - 4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ming Cheung Po/
Patent Examiner

/Ellen M McAvoy/
Primary Examiner, Art Unit 1797